1. In a magnetic storage device, a method of calibrating motion of a transducer in a vertical direction, the transducer being bi-directionally movable with respect to the surface of a rotatable magnetic medium, the method comprising:

determining an infinite resistance value of a current passed through the transducer at a first vertical position with respect to the magnetic medium surface;

determining a contact resistance value of the current passed through the transducer at a second vertical position with respect to the magnetic medium surface, the second position corresponding to physical contact between the magnetic medium surface;

iteratively adjusting the position of the transducer to a position between the first and second vertical positions while causing the transducer to pass over a plurality of ridges defined on the magnetic medium surface and measuring a resistance value of the current passed through the transducer for each iteration; and

determining the relationship between each vertical position and its corresponding resistance value.

2. A method of calibrating as defined in claim 1, wherein the transducer is located in a transducer body, and wherein the transducer is selectively moved to each vertical position by first and second bias inputs to the transducer body.

3. A method of calibrating as defined in claim 2, wherein the first and second bias inputs are electrical currents.

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4. A method of calibrating as defined in claim 2, wherein the first and second bias inputs are electrical voltage signals.

5. A method of calibrating as defined in claim 1, wherein iteratively adjusting the position of the transducer further comprises iteratively adjusting the position of the transducer at least three times after detecting a change in the resistance value during a prior iteration.

6. A method of calibrating as defined in claim 1, wherein the infinite and contact resistance values are measured when the magnetic medium surface is stationary.

7. A method of calibrating as defined in claim 1, wherein the iterative resistance values are measured when the magnetic medium surface is rotating.

8. A method of calibrating as defined in claim 1, wherein the method of calibrating is performed at multiple locations on the magnetic medium surface having different radial distances from the center of the magnetic medium surface.

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9. In a magnetic storage device, a method of calibrating motion of a transducer in a lateral direction, the transducer being bi-directionally movable with respect to the surface of a rotatable magnetic medium, the method comprising:

spinning the magnetic medium surface such that a plurality of magnetic bits defined on the magnetic medium surface are passed proximate to the transducer;

recording the variation in transducer voltage as each of the magnetic bits is read by the transducer, the transducer being positioned at a first lateral position;

iteratively moving the transducer laterally with respect to the plurality of magnetic bits to a new iterative position and recording the variation in transducer voltage as each of the magnetic bits is read by the transducer; and

determining the relationship between each lateral position and its corresponding variation in transducer voltage.

10. A method of calibrating motion of a transducer in the lateral direction as defined in claim 9, wherein the magnetic bits are positioned proximate a plurality of ridges that are used to calibrate the transducer in the vertical direction.

11. A method of calibrating motion of a transducer in the lateral direction as defined in claim 9, wherein the magnetic bits are positioned along a path that is slanted with respect to the direction of travel of the transducer over the magnetic medium surface.

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12. A method of calibrating motion of a transducer in the lateral direction as defined in claim 9, wherein the method is performed for sets of magnetic bits that are located at varying radial distances from the center of the magnetic medium surface.

13. A method of calibrating motion of a transducer in the lateral direction as defined in claim 12, wherein first and second transducers located on separate recording heads are employed to read the sets of magnetic bits that are located at varying radial distances from the center of the magnetic medium surface.

14. A method of calibrating motion of a transducer in the lateral direction as defined in claim 9, wherein the method is periodically performed during operation of the magnetic storage medium to correct deviations from the calibration.

15. A method of calibrating motion of a transducer in the lateral direction as defined in claim 9, further comprising:

compensating the relationship to account for temperature and pressure conditions existing within the magnetic storage device.

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16. A magnetic storage device, comprising:

a rotatable magnetic medium;

a recording head including:

a transducer positioned in a transducer body, the transducer body being bi-directionally movable with respect to a surface of the magnetic medium; and

a plurality of ridges defined on the magnetic medium surface to enable calibration of the transducer position with respect to the magnetic medium surface.

17. A magnetic storage device as defined in claim 16, wherein each ridge is formed about one of a series of depressions formed in the magnetic medium surface.

18. A magnetic storage device as defined in claim 16, wherein the plurality of ridges are defined in series on at least one specified region of the magnetic medium surface.

19. A magnetic storage device as defined in claim 18, wherein the ridges in series vary in height with respect to one another.

20. A magnetic storage device as defined in claim 18, wherein the specified region is located at the inner radius of the magnetic medium surface.

21. A magnetic storage device as defined in claim 18, wherein a plurality of regions of ridges are defined on the magnetic medium surface.

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22. A magnetic storage device as defined in claim 16, further comprising a plurality of magnetic bits that are defined on the magnetic medium surface to enable calibration of the transducer position with respect to the magnetic medium surface.

23. A magnetic storage device as defined in claim 22, wherein the magnetic bits are defined in series in at least one specified region of the magnetic medium surface.

24. A magnetic storage device as defined in claim 22, wherein the magnetic bits are defined in series along a line that is slanted with respect to the direction of travel of the recording head with respect to the magnetic medium surface.

25. A magnetic storage device as defined in claim 22, wherein the plurality of magnetic bits is defined on the magnetic medium surface during manufacture of the magnetic storage device.

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26. In a magnetic storage device, a method of calibrating motion of a transducer, the transducer being positioned in a transducer body that is bi-directionally movable in vertical and lateral directions with respect to the surface of a rotatable magnetic medium, the method comprising:

by the transducer body, positioning the transducer at a first vertical position with respect to the magnetic medium surface and determining an infinite resistance value of a current passed through the transducer;

by the transducer body, contacting the magnetic medium surface with the transducer at a second vertical position and determining a contact resistance value of the current passed through the transducer; and

iteratively adjusting first and second bias inputs to the transducer body to position the transducer at positions between the first and second vertical positions while causing the transducer to pass over a plurality of ridges defined on the magnetic medium surface and measuring a resistance value of the current passed through the transducer for each iteration.

27. A method of calibrating motion of a transducer as defined in claim 26, further comprising:

determining the relationship between each vertical position and its corresponding resistance value.

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28. A method of calibrating motion of a transducer as defined in claim 27, wherein iteratively adjusting first and second bias inputs further comprises:

iteratively adjusting the first and second bias inputs, wherein for each iteration the magnitude of the first bias input equals the magnitude of the second bias input, and wherein the sum of the magnitudes of the first and second bias inputs varies with each iteration.

29. A method of calibrating motion of a transducer as defined in claim 28, further comprising a lateral calibration including:

spinning the magnetic medium surface such that a plurality of magnetic bits defined on the magnetic medium surface are passed proximate to the transducer;

recording the variation in transducer voltage as each of the magnetic bits is read by the transducer, the transducer being positioned at a first lateral position; and

iteratively moving the transducer laterally with respect to the plurality of magnetic bits to a new iterative position and recording the variation in transducer voltage as each of the magnetic bits is read by the transducer.

30. A method of calibrating motion of a transducer as defined in claim 29, further comprising:

determining the relationship between each lateral position and its corresponding variation in transducer voltage.

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31. A method of calibrating motion of a transducer as defined in claim 30, wherein the lateral calibration is performed while the transducer body is positioned at a fixed vertical position.

32. A method of calibrating motion of a transducer as defined in claim 31, wherein iteratively moving the transducer laterally further comprises:

iteratively moving the transducer laterally via the transducer body by the first and second bias inputs, wherein for all iterations the sum of the magnitudes of the first and second bias inputs equals a fixed sum, and wherein for each iteration the magnitude of the first bias input varies differently from the magnitude of the second bias input.

33. A method of calibrating motion of a transducer as defined in claim 32, wherein the widths of a write head portion and a read head portion of the transducer are determined after calibration of the transducer.

34. A method of calibrating motion of a transducer as defined in claim 32, further comprising:

accounting for temperature and pressure conditions in the magnetic storage device in determining the relationships of the vertical and lateral positions.

35. A method of calibrating motion of a transducer as defined in claim 32, wherein the calibrated movement of the transducer can be described as a plurality of functions that relate to the bias inputs of the transducer body.

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